

Claims

- 5 1. A detector unit (11) which is designed for connection to an optical
bus which is formed by detector units (11) of the same type ar-
ranged adjacently,
wherein the detector unit has a light transmitter (23), a light re-
ceiver (25) and at least one optical connection path (15) by which
10 two optical interfaces (17, 17') are connected, and wherein at least
one optical anomaly (21) is arranged along the optical connection
path which is made to couple light of the light transmitter (23) into
the optical connection path (15) and to couple light out of the optical
connection path (15) to the light receiver (25).
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2. A detector unit in accordance with claim 1, characterized in that the
optical connection path (15) is formed by a light conductor or by a
reflecting passage.
- 20 3. A detector unit in accordance with claim 1, characterized in that the
optical connection path (15) extends in a straight line within the de-
tector unit (11).
- 25 4. A detector unit in accordance with claim 1, characterized in that the
optical interfaces (17, 17') are arranged at opposite sides of the de-
tector unit (11).

5. A detector unit in accordance with claim 1, characterized in that an optical interface (17, 17') has a terminal window transparent to the wavelength used and/or a housing section transparent to the wavelength used and/or a terminal adapter for the connection of a connection light guide and/or a terminal adapter for the reception of a reflecting terminal element.
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6. A detector unit in accordance with claim 1, characterized in that the optical anomaly (21) has a totally reflecting recess of the optical connection path or one or more partly transmitting reflection elements.
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7. A detector unit in accordance with claim 1, characterized in that the detector unit (11) has a single light transmitter (23) for the coupling of light of the light transmitter into the optical connection path (15) and a single light receiver (25) for the reception of light from the optical connection path (15).
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8. A detector unit in accordance with claim 1, characterized in that the optical interfaces (17, 17'), the optical anomaly (21), the light transmitter (23) and the light receiver (25) are arranged such that both the optical interfaces are optically connected to one another and each of the optical interfaces are optically connected to the light transmitter and to the light receiver.
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9. A detector unit in accordance with claim 1, characterized in that the light transmitter (23) and the light receiver (25) are formed by a transceiver element.
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10. A detector unit in accordance with claim 1, characterized in that the detector unit (11) has two optical connection paths (15) by which in each case two optical interfaces (17, 17') are connected, with the light transmitter (23) with an associated optical anomaly (21) being arranged at the one optical connection path (15) and the light receiver (25) with another associated optical anomaly (21) being arranged at the other optical connection path (15).
11. A detector unit in accordance with claim 1, characterized in that the detector unit (11) has a sensor device (13), in particular an optoelectronic sensor device, or a part (13) of a sensor device, in particular an optical or electrical interface to a sensor head.
12. A system having a plurality of detector units (11) in accordance with claim 1.
13. A system in accordance with claim 12, characterized in that the optical interfaces (17, 17') of detector units (11) arranged adjacently are provided in a congruent arrangement.
14. A system in accordance with claim 12, characterized in that the system has at least one adapter unit (39) with an optical interface (41) and at least one light guide output (43) connected optically or optoelectronically hereto, with the optical interface being provided in a congruent arrangement to an optical interface (17') of an adjacent detector unit (11).

15. A system in accordance with claim 12, characterized in that the system has at least one terminal unit (29) having a terminal reflector (31) which is provided in a congruent arrangement to an optical interface (17) and of an adjacent detector unit (11).
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16. A system in accordance with claim 12, characterized in that the system has at least one terminal unit (57) which has two optical interfaces (59) and an optical connection path (61) connecting these two interfaces, with the two interfaces being provided in a congruent arrangement to two optical interfaces (17, 17') of an adjacent detector unit (11).
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17. A system in accordance with claim 12, characterized in that the system has a control unit for the synchronization of the optical bus.
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